

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: JANIS DOTE Examiner #: 65274 Date: 2/25/05
 Art Unit: 1756 Phone Number 30 571-272-1382 Serial Number: 101760, 039
 Mail Box and Bldg/Room Location: REM 9C75 Results Format Preferred (circle) PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Biore-based dendritic charge transport materials

Inventors (please provide full names): Zbigniew Tokarski; Nusrallah Jubran;

Vytautas Ketautis; Valentas Naidelis; Marijta Daskewicene;

Edmundas Mantrimas; Ingrida Paulauskaite; Jonas Sidarevicius

Earliest Priority Filing Date: 6/30/03

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search compound in ^{attached} claims 22-25.

Examples of compounds from specification are also attached.

SCIENTIFIC REFERENCE BR
 Sci & Tech Inf. Ctr.

FEB 25 RECD

Pat. & T.M. Office

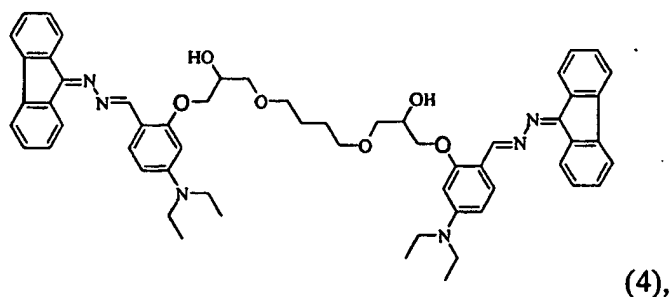
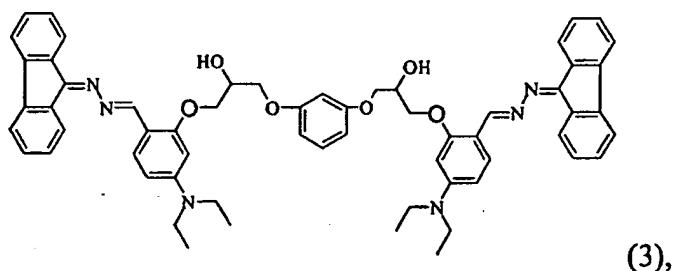
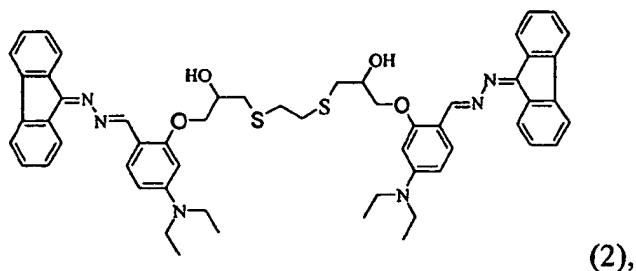
STAFF USE ONLY

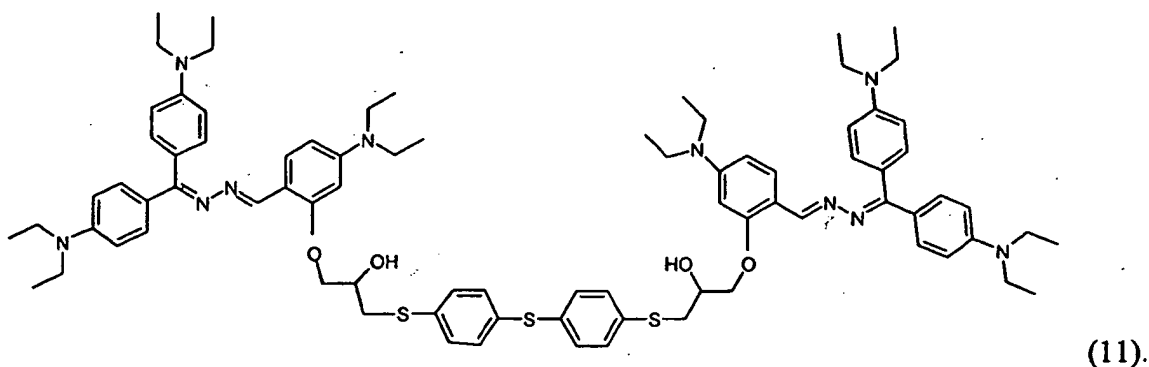
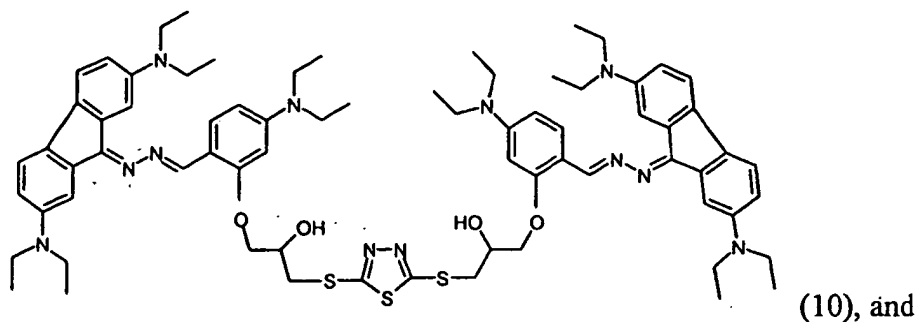
Searcher:	Type of Search	Vendors and cost where applicable
<u>Ed</u>	NA Sequence (#) <u>STN</u>	
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#)	Questel/Orbit
Date Searcher Picked Up:	Bibliographic	Dr. Link
Date Completed: <u>3-4-05</u>	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time:	Other	Other (specify)

Y and Y' comprise, each independently, a (disubstituted)methylene group, such as a (di-aromatic)methylene group, for example, 10H-anthracen-9-ylidene group, 9-fluorenylidenyl group, and diarylmethylene group (e.g. diphenylmethylene group); and

Z is a linking group, such as $-(CH_2)_m-$ where m is an integer between 1 and 20, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an NR_6 group, a CR_7 , or a CR_8R_9 group where R_6 , R_7 , R_8 , and R_9 are, independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group.

Non-limiting examples of such charge transport materials have the following formulas:





- 5 These photoreceptors may be used successfully with both dry toners and liquid toners to produce high quality images. The high quality of the images can be maintained after repeated cycling.

Synthesis Of Charge Transport Materials

- 10 The synthesis of the charge transport materials of this invention can be prepared by the following multi-step synthetic procedures, although other suitable procedures can be used by a person of ordinary skill in the art based on the disclosure herein.

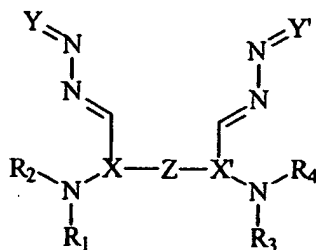
- 15 The first step is the reaction of a (disubstituted)ketone, such as diphenyl ketone, 9-fluorenone, and 10H-anthracenone, with an excess of hydrazine to form the corresponding (disubstituted)ketone hydrazone. In the second step, the (disubstituted)ketone hydrazone reacts with an aromatic aldehyde having a (disubstituted)amine group and a hydroxyl group to form the corresponding azine compound having a (disubstituted)amine group and a hydroxyl group. This step supplies the Y, X, R₁ and R₂ groups or the Y', X', R₃ and R₄ groups of formula (1).

19. The electrophotographic imaging process of claim 18 wherein said organophotoreceptor further comprises a second charge transport material.

20. The electrophotographic imaging process of claim 18 wherein Z has the formula $-(CH_2)_m-$ where m is an integer between 1 and 20, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an NR_6 group, a CR_7 , or a CR_8R_9 group where R_6 , R_7 , R_8 , and R_9 are, independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group.

21. The electrophotographic imaging process of claim 18 wherein said toner comprises colorant particles.

22.) A charge transport material having the formula



where R₁, R₂, R₃, and R₄ comprise, each independently, an alkyl group, an alkenyl group, an aromatic group, a heterocyclic group, or a part of a ring group;

X and X' comprise, each independently, an aromatic group;

Y and Y' comprise, each independently, a (disubstituted)methylene group; and

Z is a linking group.

23. The charge transport material of claim 22 wherein X and X' are, each independently, a C₆H₃ group.

Attorney Docket 3216.57-US-02

1 24. The charge transport material of claim 22 wherein the
2 (disubstituted)methylene group is selected from the group consisting of a 10H-
3 anthracen-9-ylidene group, a 9-fluorenylidene group, and a diarylmethylene group.

1 25. The charge transport material of claim 22 wherein Z has the formula $-(CH_2)_m-$
2 where m is an integer between 1 and 20, inclusive, and one or more of the methylene
3 groups is optionally replaced by O, S, N, C, B, P, C=O, O=S=O, a heterocyclic group, an
4 aromatic group, urethane, urea, an ester group, an NR_6 group, a CR_7 , or a CR_8R_9 group
5 where R_6 , R_7 , R_8 , and R_9 are, independently, a bond, H, hydroxyl, thiol, carboxyl, an
6 amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group,
7 or part of a ring group.

=> file reg

FILE 'REGISTRY' ENTERED AT 11:37:49 ON 04 MAR 2005
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
 COPYRIGHT (C) 2005 American Chemical Society (ACS)

=> d his

FILE 'LREGISTRY' ENTERED AT 11:15:52 ON 04 MAR 2005
 L1 STR

FILE 'REGISTRY' ENTERED AT 11:28:35 ON 04 MAR 2005
 L2 0 S L1
 L3 STR L1
 L4 9 S L3
 L5 1778 S L3 FUL
 SAV L5 DOT039/A
 L6 1 S L1 SSS SAM SUB=L5
 L7 19 S L1 SSS FUL SUB=L5
 SAV L7 DOT039A/A

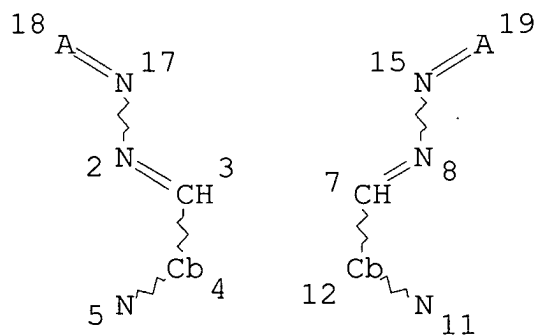
FILE 'CAOLD' ENTERED AT 11:35:08 ON 04 MAR 2005
 L8 0 S L7

FILE 'ZCAPLUS' ENTERED AT 11:37:38 ON 04 MAR 2005
 L9 6 S L7

FILE 'REGISTRY' ENTERED AT 11:37:49 ON 04 MAR 2005

=> d 17 que stat

L1 STR



NODE ATTRIBUTES:

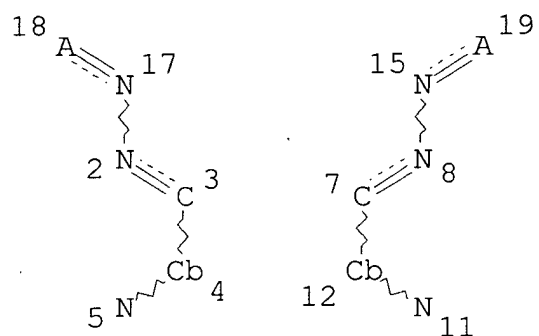
NSPEC IS RC AT 5
 NSPEC IS RC AT 11
 NSPEC IS RC AT 18
 NSPEC IS RC AT 19
 CONNECT IS M3 RC AT 4
 CONNECT IS M3 RC AT 12
 DEFAULT MLEVEL IS ATOM
 GGCAT IS UNS AT 4
 GGCAT IS UNS AT 12
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L3 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 5
 NSPEC IS RC AT 11
 NSPEC IS RC AT 18
 NSPEC IS RC AT 19
 CONNECT IS M3 RC AT 4
 CONNECT IS M3 RC AT 12
 DEFAULT MLEVEL IS ATOM
 GGCAT IS UNS AT 4
 GGCAT IS UNS AT 12
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L5 1778 SEA FILE=REGISTRY SSS FUL L3

L7 19 SEA FILE=REGISTRY SUB=L5 SSS FUL L1

100.0% PROCESSED 1729 ITERATIONS
SEARCH TIME: 00.00.01

19 ANSWERS

=> file zcaplus

FILE 'ZCAPLUS' ENTERED AT 11:40:20 ON 04 MAR 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

=> d 19 1-6 all hitstr

L9 ANSWER 1 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:1965 ZCAPLUS

DN 142:103066

ED Entered STN: 31 Dec 2004

TI Azine-based dimeric charge transport materials

IN Tokarski, Zbigniew; Jubran, Nusrallah; Getautis, Vytautas; Gaidelis, Valentas; Daskeviciene, Maryte; Montrimas, Edmundas; Paulauskaite, Ingrida; Sidaravicius, Jonas *applicants*

PA USA

SO U.S. Pat. Appl. Publ., 20 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM G03G005-06

ICS C07C251-72

NCL 430058350; 430072000; 430077000; 430074000; 430058650; 564251000

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	US 2004265717	A1	20041230	US 2004-760039	20040116
	EP 1494080	A1	20050105	EP 2004-253868	20040629

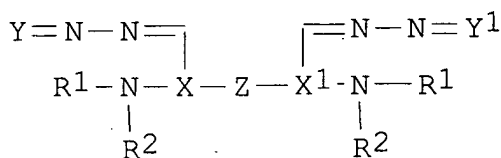
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,

PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,
 PL, SK, HR
 JP 2005025192 A2 20050127 JP 2004-194403
 200406
 30
 PRAI US 2003-483726P P 20030630
 US 2004-760039 A 20040116

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004265717	ICM	G03G005-06
	ICS	C07C251-72
	NCL	430058350; 430072000; 430077000; 430074000; 430058650; 564251000
US 2004265717	ECLA	C07C251/88
EP 1494080	ECLA	C07C251/88
JP 2005025192	FTERM	2H068/AA20; 2H068/AA34; 2H068/AA35; 2H068/AA54; 2H068/AA55; 2H068/BA16; 2H068/BA18; 2H068/BA23; 4C036/AD08; 4C036/AD20; 4H006/AA01; 4H006/AA03; 4H006/AB76; 4H006/TA04; 4H006/TB14; 4H006/TB36; 4H006/TB76

GI



I

- AB Improved organo photoreceptor comprises an elec. conductive substrate and a photoconductive element on the elec. conductive substrate, the photoconductive element comprising: (a) a charge transport material having the formula I (R1-4 = alkyl group, alkenyl group, arom. group, heterocyclic group, or a part of a ring group; X and X' = arom. group; Y and Y' = (disubstituted)methylene group; and Z is a linking group); (b) a charge generating compd.; and (c) an elec. conductive substrate on which said charge transport material and said charge generating compd. are located. Corresponding electrophotog. apparatuses and imaging methods are also described.
- ST azine dimeric electrophotog photoreceptor charge transport material
- IT Electrophotographic photoconductors (photoreceptors)
 (azine-based dimeric charge transport materials)
- IT 816463-93-1P 816463-94-2P 816463-95-3P
 816463-96-4P 816463-97-5P 816463-98-6P
 816463-99-7P 816464-00-3P 816464-01-4P

816464-02-5P

(azine-based dimeric charge transport materials for electrophotog.)

IT 2915-84-6P, 2,7-Diamino-9-fluorenone 122010-64-4P 215377-16-5P
816464-03-6P 816464-04-7P 816464-05-8P 816464-07-0P
816464-08-1P

(prepn. of azine-based dimeric charge transport materials for electrophotog.)

IT 80-05-7, reactions 90-93-7 106-89-8, Epichlorohydrin, reactions
108-46-3, 1,3-Benzenediol, reactions 486-25-9, 9-Fluorenone
540-63-6, 1,2-Ethanedithiol 626-04-0, 1,3-Benzenedithiol
1072-71-5, 1,3,4-Thiadiazolidine-2,5-dithione 2425-79-8,
1,4-Butanediol diglycidyl ether 17754-90-4, 4-
Diethylaminosalicylaldehyde 19362-77-7, 4,4'-Thiobisbenzenethiol
31551-45-8, 2,7-Dinitro-9-fluorenone

(prepn. of azine-based dimeric charge transport materials for electrophotog.)

IT 13629-22-6P 816464-06-9P

(prepn. of azine-based dimeric charge transport materials for electrophotog.)

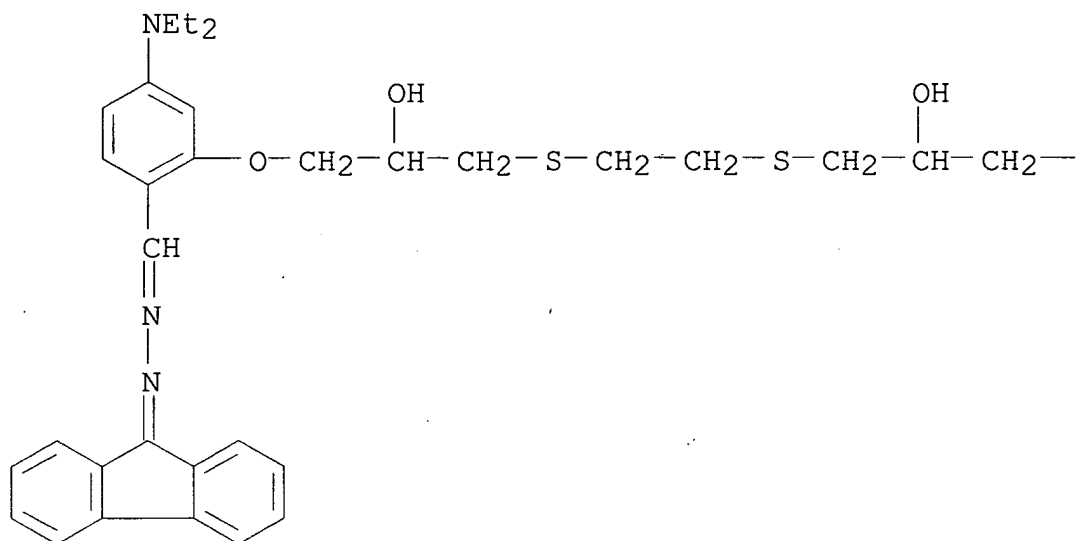
IT 816463-93-1P 816463-94-2P 816463-95-3P
816463-96-4P 816463-97-5P 816463-98-6P
816463-99-7P 816464-00-3P 816464-01-4P
816464-02-5P

(azine-based dimeric charge transport materials for electrophotog.)

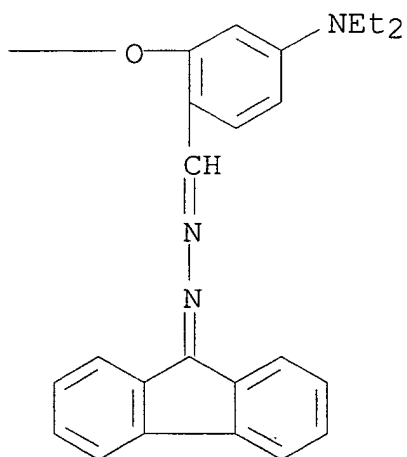
RN 816463-93-1 ZCAPLUS

CN Benzaldehyde, 2,2'-[1,2-ethanediylbis[thio(2-hydroxy-3,1-propanediyl)oxy]]bis[4-(diethylamino)-, bis(9H-fluoren-9-ylidenehydrazone) (9CI) (CA INDEX NAME)

PAGE 1-A



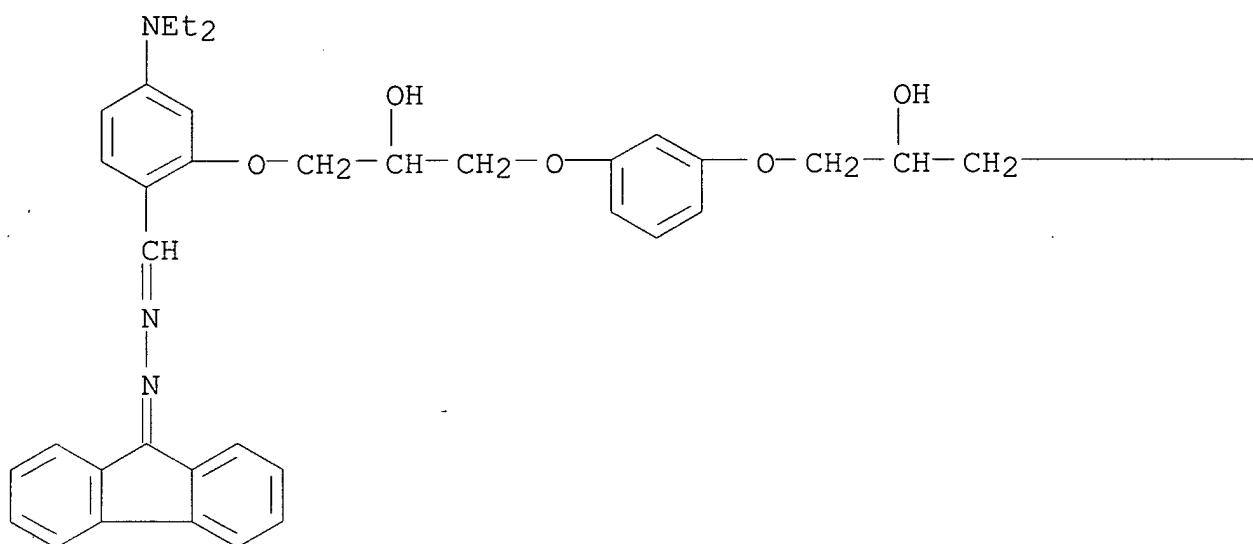
PAGE 1-B



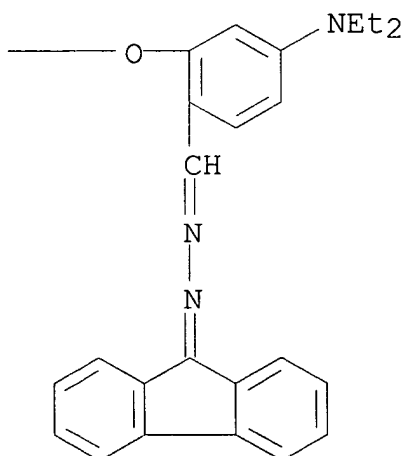
RN 816463-94-2 ZCAPLUS

CN Benzaldehyde, 2,2'-[1,3-phenylenebis[oxy(2-hydroxy-3,1-propanediyl)oxy]]bis[4-(diethylamino)-, bis(9H-fluoren-9-ylidenehydrazone) (9CI) (CA INDEX NAME)

PAGE 1-A



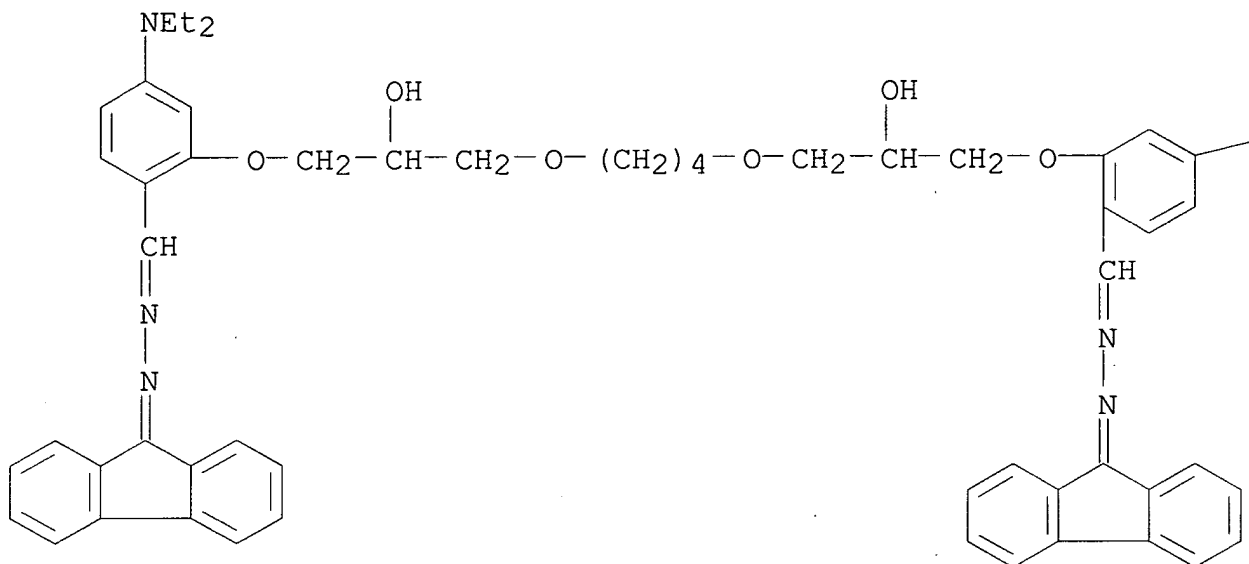
PAGE 1-B



RN 816463-95-3 ZCAPLUS
CN Benzaldehyde, 2,2'-[1,4-butanediylbis[oxy(2-hydroxy-3,1-propanediyl)oxy]]bis[4-(diethylamino)-, bis(9H-fluoren-9-

ylidenehydrazone) (9CI) (CA INDEX NAME)

PAGE 1-A

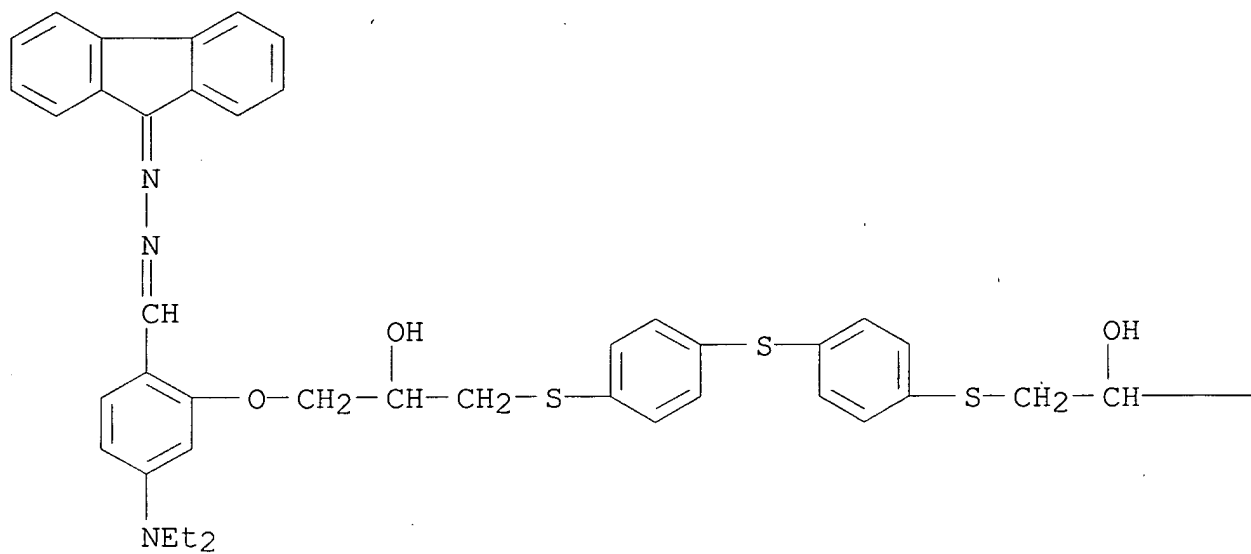


PAGE 1-B

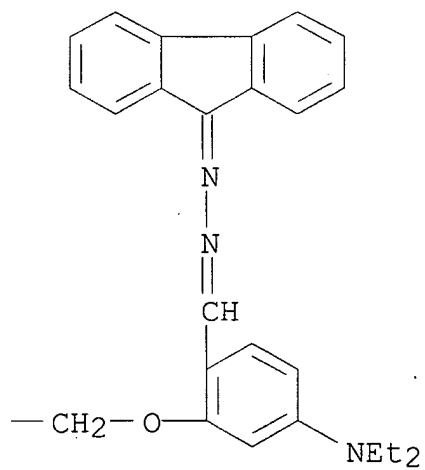
—NEt₂

RN 816463-96-4 ZCAPLUS
CN INDEX NAME NOT YET ASSIGNED

PAGE 1-A

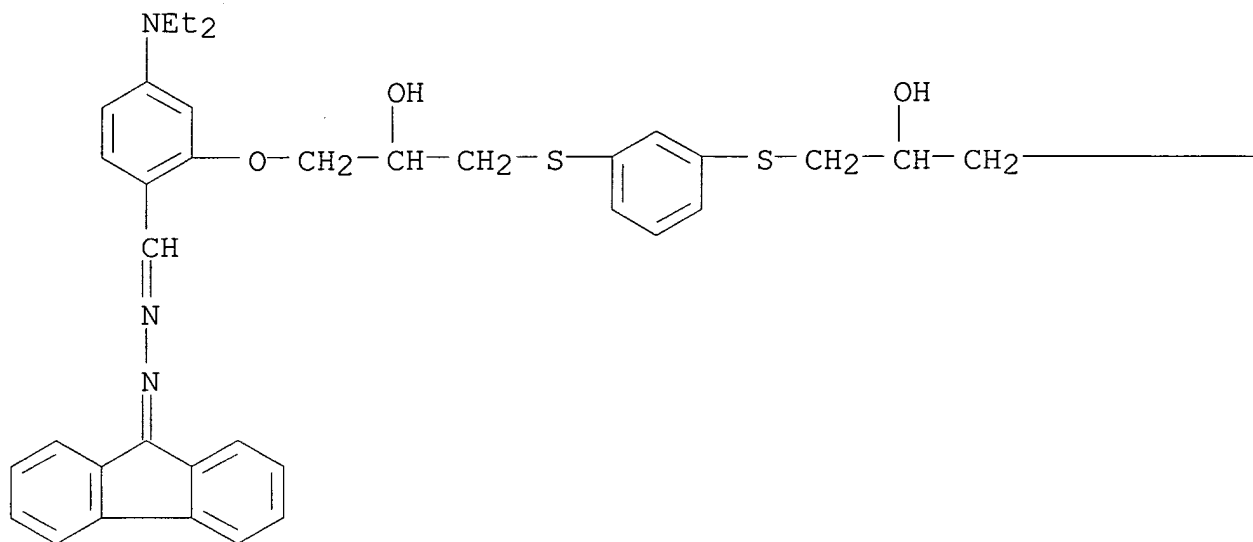


PAGE 1-B

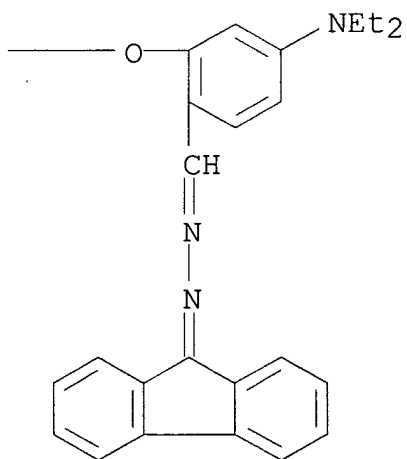


RN 816463-97-5 ZCAPLUS
CN INDEX NAME NOT YET ASSIGNED

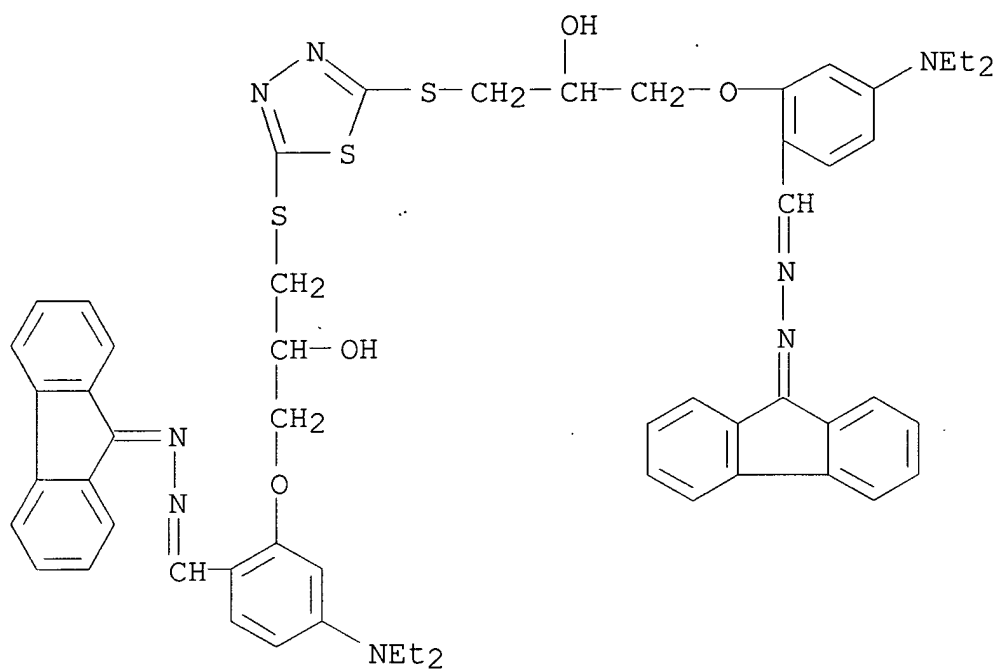
PAGE 1-A



PAGE 1-B

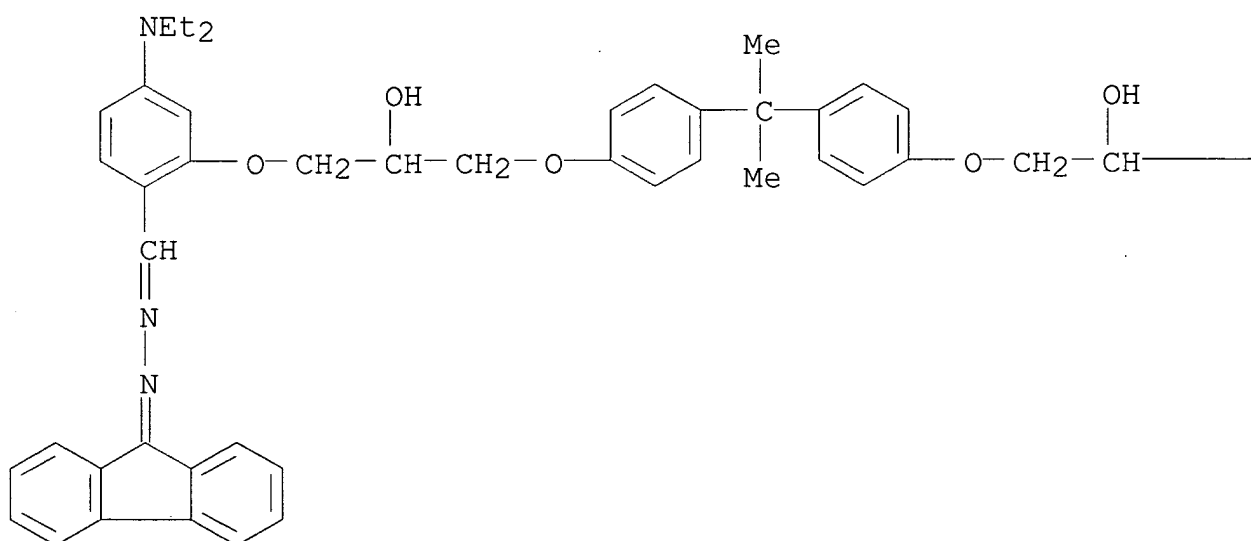


RN 816463-98-6 ZCAPLUS
CN INDEX NAME NOT YET ASSIGNED

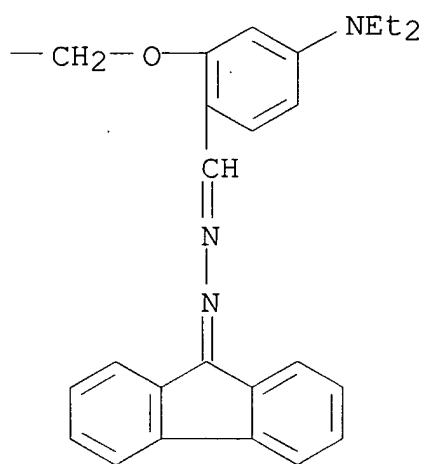


RN 816463-99-7 ZCAPLUS
CN INDEX NAME NOT YET ASSIGNED

PAGE 1-A

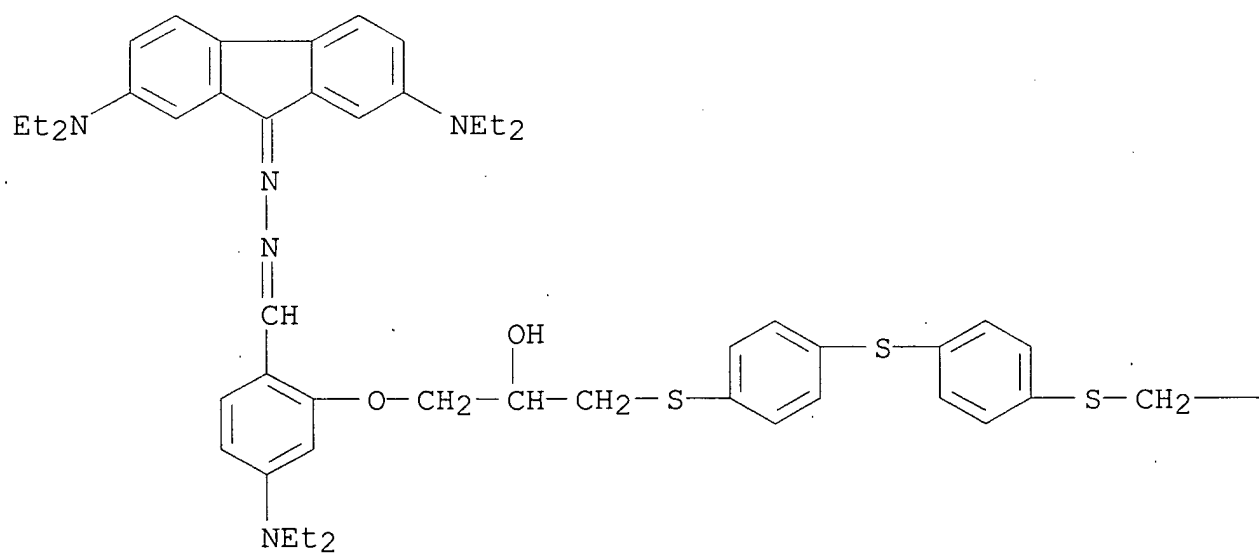


PAGE 1-B

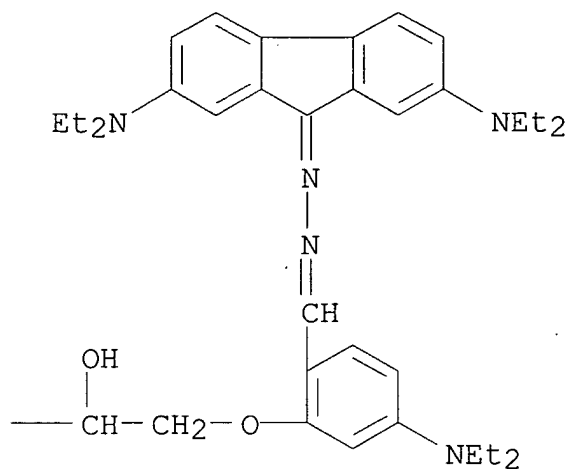


RN 816464-00-3 ZCAPLUS
CN INDEX NAME NOT YET ASSIGNED

PAGE 1-A

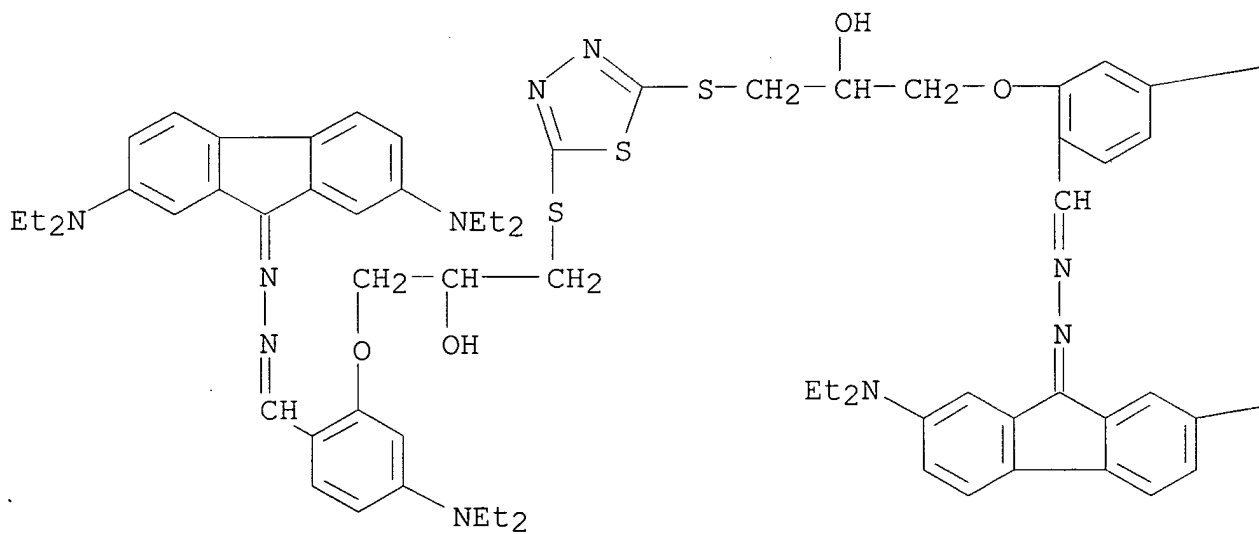


PAGE 1-B



RN 816464-01-4 ZCAPLUS
 CN INDEX NAME NOT YET ASSIGNED

PAGE 1-A



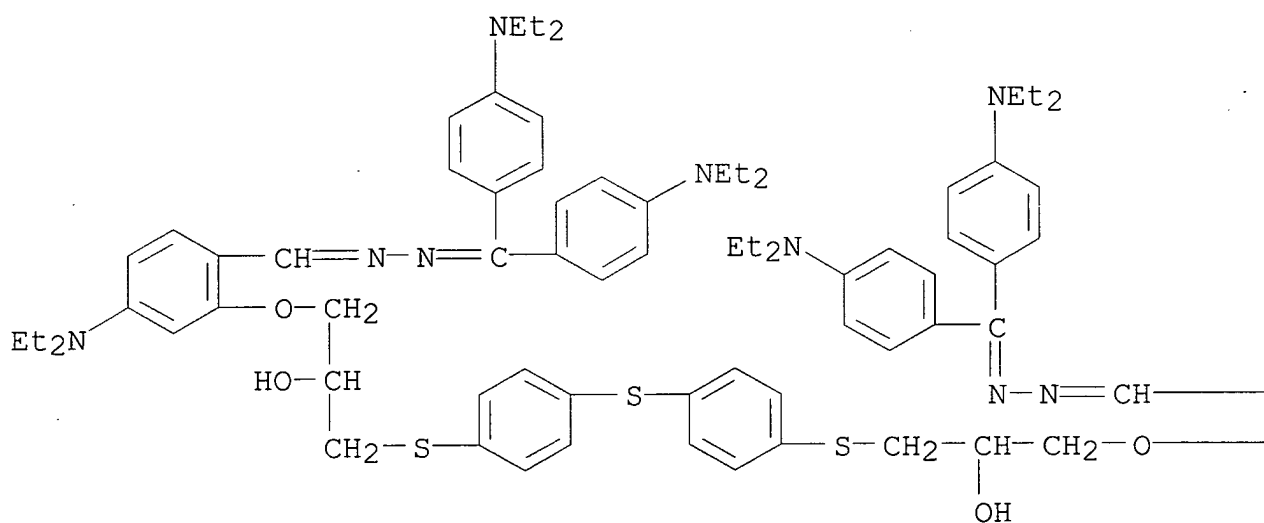
PAGE 1-B

—NEt₂

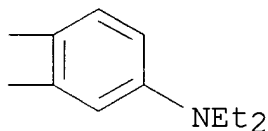
—NEt₂

RN 816464-02-5 ZCAPLUS
CN INDEX NAME NOT YET ASSIGNED

PAGE 1-A



PAGE 1-B



L9 ANSWER 2 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:231790 ZCAPLUS
DN 141:63806
ED Entered STN: 22 Mar 2004
TI Regioselective HON-addition of bifunctional hydrazone oximes to
Pt(IV)-bound nitriles
AU Garnovskii, Dmitrii A.; Pombeiro, Armando J. L.; Haukka, Matti;
Sobota, Piotr; Kukushkin, Vadim Yu.
CS Centro de Quimica Estrutural, Complexo I, Instituto Superior
Tecnico, Lisbon, 1049-001, Port.
SO Dalton Transactions (2004), (7), 1097-1103
CODEN: DTARAF; ISSN: 1477-9226
PB Royal Society of Chemistry
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
OS CASREACT 141:63806
AB Treatment of trans-[PtCl₄(RCN)₂] (R = Me, Et) with the hydrazone
oximes MeC(:NOH)C(R'):NNH₂ (R' = Me, Ph) at 45.degree. in CH₂Cl₂
gave trans-[PtCl₄{NH:C(R)ON:C(Me)C(R'):NNH₂}₂] (R/R' = Me/Ph 1,
Et/Me 2, Et/Ph 3) due to the regioselective OH-addn. of the
bifunctional MeC(:NOH)C(R'):NNH₂ to the nitrile group. The reaction
of 3 and Ph₃P:CHCO₂Me gave the Pt(II) complex trans-
[PtCl₂{NH:C(Et)ON:C(Me)C(Ph):NNH₂}₂] (4). In 4, the imine ligand
was liberated by substitution with 2 equiv of dppe
(bis(1,2-diphenylphosphino)ethane) in CDCl₃ to give, along with the
free ligand, [Pt(dppe)₂]Cl₂. The free iminoacyl hydrazone, having a

restricted life-time, decomp. at 20-25.degree. in .apprx.20 h to the parent organonitrile and the hydrazone oxime. The Schiff condensation of the free NH₂ groups of 4 with arom. aldehydes, i.e. 2-OH-5-NO₂-benzaldehyde and 4-NO₂-benzaldehyde, brings about the formation of the Pt(II) complexes trans-[PtCl₂{NH:C(Et)ON:C(Me)C(Ph):NN:CH(C₆H₃-2-OH-5-NO₂)}₂] (5) and trans-[PtCl₂{NH:C(Et)ON:C(Me)C(Ph):NN:CH(C₆H₄-4-NO₂)}₂] (6), resp., contg. functionalized remote peripheral groups. Metalization of 5, which can be considered as a novel type of metallo-ligand, was achieved by its reaction with M(OAc)₂.nH₂O (M = Cu, n = 2; M = Co, n = 4) in a 1 : 1 molar ratio furnishing solid heteronuclear compds. [Pt]:[M] = 1 : 1. The complexes were characterized by C, H, N elemental analyses, FAB+ mass-spectrometry, IR, ¹H, ¹³C{¹H} and ¹⁹⁵Pt NMR spectroscopies; x-ray structures were detd. for 3, 4 and 5.

- ST platinum hydrazoneoxime nitrile prepn; crystal structure platinum hydrazoneoxime nitrile
- IT Crystal structure
Molecular structure
(of platinum complexes with bifunctional ligands derived from hydrazone oximes and nitriles)
- IT 107-12-0, Propanenitrile
(formation from decomp. of iminoacyl hydrazone)
- IT 17116-21-1, Bis[1,2-bis(diphenylphosphino)ethane]platinum(2+) dichloride
(formation from reaction of dppe with platinum complexes contg. bifunctional ligands derived from hydrazone oximes and nitriles)
- IT 709046-49-1
(formation from reaction of dppe with platinum complexes contg. bifunctional ligands derived from hydrazone oximes and nitriles and decomp.)
- IT 709046-40-2P 709046-41-3P 709046-45-7P
(prepn. of)
- IT 709046-46-8P 709046-48-0P
(prepn. of polymeric)
- IT 709046-43-5P
(prepn., crystal structure and reaction with arom. aldehydes)
- IT 709046-42-4P
(prepn., crystal structure and reaction with phosphorus ylide)
- IT 709046-44-6P
(prepn., crystal structure and reaction with transition metal acetates)
- IT 143729-50-4, trans-Bis(acetonitrile)tetrachloroplatinum
342028-87-9, trans-Tetrachlorobis(propanenitrile)platinum
(reaction with hydrazone oximes)
- IT 97-51-8, 5-Nitrosalicylaldehyde 555-16-8, 4-Nitrobenzaldehyde, reactions 1663-45-2, 1,2-Bis(diphenylphosphino)ethane
(reaction with platinum complex contg. bifunctional ligands)

derived from hydrazone oximes and nitriles)
IT 6874-04-0
(reaction with platinum nitrile complexes)
IT 41939-99-5
(reaction with platinum nitrile complexes and formation from
decomp. of iminoacyl hydrazone)
IT 2605-67-6, Methyl (triphenylphosphoranylidene)acetate
(reducing agent; reaction with platinum complex contg.
bifunctional ligands derived from hydrazone oximes and nitriles)
RE.CNT 93 THERE ARE 93 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Adams, H; Inorg Chem Commun 2000, V3, P24 ZCAPLUS
- (2) Allen, F; J Chem Soc, Perkin Trans 2 1987, PS1 ZCAPLUS
- (3) Altomare, A; J Appl Crystallogr 1999, V32, P115 ZCAPLUS
- (4) Anderson, G; Inorg Chim Acta 1983, V76, PL251 ZCAPLUS
- (5) Ang, H; J Chem Soc, Dalton Trans 1993, P847 ZCAPLUS
- (6) Bagrov, F; Russ J Org Chem 2001, V37, P15 ZCAPLUS
- (7) Beck, B; Dalton Trans 2003, P2533 ZCAPLUS
- (8) Belinski, J; J Coord Chem 1988, V19, P159 ZCAPLUS
- (9) Bieda, K; Inorg Chem 1993, V32, P4209 ZCAPLUS
- (10) Bogdanovic, G; Polyhedron 2001, V20, P2231 ZCAPLUS
- (11) Bokach, N; Inorg Chem 2003, V42, P836
- (12) Cariati, F; Inorg Chem 2002, V41, P6597 ZCAPLUS
- (13) Chakrabarti, P; Indian J Chem, Sect A 2000, V39, P571
- (14) Charmier, M; Dalton Trans 2003, P2540
- (15) Chen, W; Eur J Inorg Chem 2002, P2664
- (16) Chen, W; Inorg Chim Acta 2003, V342, P88 ZCAPLUS
- (17) Chin, J; Acc Chem Res 1991, V24, P145 ZCAPLUS
- (18) Constable, E; Metals and Ligand Reactivity. An Introduction to the
Organic Chemistry of Metal Complexes 1995, P65
- (19) Cotton, F; Polyhedron 1998, V17, P2781 ZCAPLUS
- (20) da Rocha, Z; Adv Chem Ser 1997, P297 ZCAPLUS
- (21) Dinda, R; J Chem Soc, Dalton Trans 2002, P4434 ZCAPLUS
- (22) Dutta, S; Inorg Chem 2002, V41, P5555 ZCAPLUS
- (23) Eglin, J; Comments Inorg Chem 2002, V23, P23 ZCAPLUS
- (24) Endres, H; Comprehensive Coordination Chemistry 1987, V2, P261
- (25) Fang, C; Organometallics 2001, V20, P2525 ZCAPLUS
- (26) Farrugia, L; J Appl Crystallogr 1999, V32, P837
- (27) Fomina, I; J Organomet Chem 2001, V636, P157 ZCAPLUS
- (28) Foster, M; J Chem Soc 1912, P2235
- (29) Freisinger, E; J Chem Soc, Dalton Trans 2000, P3281 ZCAPLUS
- (30) Fun, H; Acta Crystallogr, Sect C 1999, V55, P896
- (31) Galic, N; J Mol Struct 2001, V559, P187 ZCAPLUS
- (32) Grzybowski, J; Inorg Chem 1993, V32, P5266 ZCAPLUS
- (33) Iskander, M; J Coord Chem 2003, V56, P1075 ZCAPLUS
- (34) Iskander, M; Polyhedron 2001, V20, P2787 ZCAPLUS
- (35) John, R; Polyhedron 2002, V21, P2515 ZCAPLUS
- (36) Kim, I; Inorg Chim Acta 2001, V317, P12 ZCAPLUS

- (37) Kitano, K; J Chem Soc, Dalton Trans 2000, P995 ZCAPLUS
- (38) Kogan, V; Russ J Coord Chem 1998, V24, P177 ZCAPLUS
- (39) Kopylovich, M; Inorg Chem 2002, V41, P4798 ZCAPLUS
- (40) Kopylovich, M; Inorg Chem 2003, V42, P7239 ZCAPLUS
- (41) Kopylovich, M; J Chem Soc, Perkin Trans 1 2001, P1569 ZCAPLUS
- (42) Kukushkin, V; WO 01/98283 A1 ZCAPLUS
- (43) Kukushkin, V; Chem Rev 2002, V102, P1771 ZCAPLUS
- (44) Kukushkin, V; Inorg Chem 1998, V37, P6511 ZCAPLUS
- (45) Kukushkin, V; Inorg Chem 2000, V39, P216 ZCAPLUS
- (46) Kukushkin, V; Russ J Inorg Chem (Engl Transl) 1988, V33, P1085
- (47) Kukushkin, V; Zh Neorg Khim 1988, V33, P1905 ZCAPLUS
- (48) Kukushkin, Y; Inorg Chim Acta 1999, V285, P203 ZCAPLUS
- (49) Li, Q; Dalton Trans 2003, P1551 ZCAPLUS
- (50) Lin, S; J Chem Soc, Dalton Trans 2002, P1595 ZCAPLUS
- (51) Luzyanin, K; J Chem Soc, Dalton Trans 2002, P1882 ZCAPLUS
- (52) Makarycheva-Mikhailova, A; Inorg Chem 2003, V42, P2805 ZCAPLUS
- (53) Makarycheva-Mikhailova, A; Inorg Chem 2003, V42, P301 ZCAPLUS
- (54) Mandlik, P; J Indian Chem Soc 2002, V79, P689 ZCAPLUS
- (55) Mandlik, P; Pol J Chem 2003, V77, P129 ZCAPLUS
- (56) Maresca, L; J Am Chem Soc 1986, V108, P1180 ZCAPLUS
- (57) Michelin, R; Coord Chem Rev 1996, V147, P299 ZCAPLUS
- (58) Michelin, R; Inorg Chim Acta 1994, V222, P327 ZCAPLUS
- (59) Mikuriya, M; Chem Lett 1998, P421 ZCAPLUS
- (60) Murahashi, S; Acc Chem Res 2000, V33, P225 ZCAPLUS
- (61) Murray, B; 2003 ZCAPLUS
- (62) Murray, B; Org React Mech 2003, P1 ZCAPLUS
- (63) Otwinowski, Z; Methods Enzymol 1997, V276, P307 ZCAPLUS
- (64) Pal, S; 2002 ZCAPLUS
- (65) Pal, S; Proc Indian Acad Sci, Chem Sci 2002, V114, P417 ZCAPLUS
- (66) Parkins, A; Platinum Met Rev 1996, V40, P169 ZCAPLUS
- (67) Patole, J; Inorg Chim Acta 2001, V318, P207 ZCAPLUS
- (68) Pavlishchuk, V; Chem Commun 2002, P468 ZCAPLUS
- (69) Pavlishchuk, V; Inorg Chem 1999, V38, P1759 ZCAPLUS
- (70) Pombeiro, A; PT 102618 P 2001 ZCAPLUS
- (71) Pombeiro, A; Comprehensive Coordination Chemistry, 2nd edn V1, P585 ZCAPLUS
- (72) Pombeiro, A; Comprehensive Coordination Chemistry, 2nd edn 2003, V1, P639
- (73) Rana, A; Polyhedron 2003, V22, P3075 ZCAPLUS
- (74) Richardson, D; J Biol Inorg Chem 1999, V4, P266 ZCAPLUS
- (75) Rousselet, G; Tetrahedron Lett 1993, V34, P6395 ZCAPLUS
- (76) Sandbhor, U; J Inorg Biochem 2002, V90, P127 ZCAPLUS
- (77) Sheldrick, G; SHELXL-97, Program for Crystal Structure Refinement 1997
- (78) Sheldrick, G; SHELXS97, Program for Crystal Structure Determination 1997
- (79) Sheldrick, G; SHELXTL v 6.12 2002
- (80) Syamala, A; Inorg Chem 1991, V30, P4699 ZCAPLUS

- (81) Szczena, B; New J Chem 2002, V26, P243
 (82) Ukwueze, A; Int J Chem 2003, V13, P181 ZCAPLUS
 (83) Vicente, J; Inorg Chem 2001, V40, P2051 ZCAPLUS
 (84) Voloshin, Y; Inorg Chim Acta 1999, V284, P180 ZCAPLUS
 (85) Voloshin, Y; Inorg Chim Acta 2000, V299, P104 ZCAPLUS
 (86) Voloshin, Y; Polyhedron 2001, V20, P2721 ZCAPLUS
 (87) Voloshin, Y; Russ Chem Bull 2002, V51, P1015 ZCAPLUS
 (88) Voloshin, Z; Inorg Chem Commun 1998, V1, P328
 (89) Wagner, G; Inorg Chem 2001, V40, P1683 ZCAPLUS
 (90) Wagner, G; Inorg Chem 2001, V40, P264 ZCAPLUS
 (91) Wagner, G; J Am Chem Soc 2000, V122, P3106 ZCAPLUS
 (92) Weng Ng, S; Z Kristallogr 1997, V212, P277
 (93) Yilmaz, I; Heteroat Chem 2003, V14, P617 ZCAPLUS

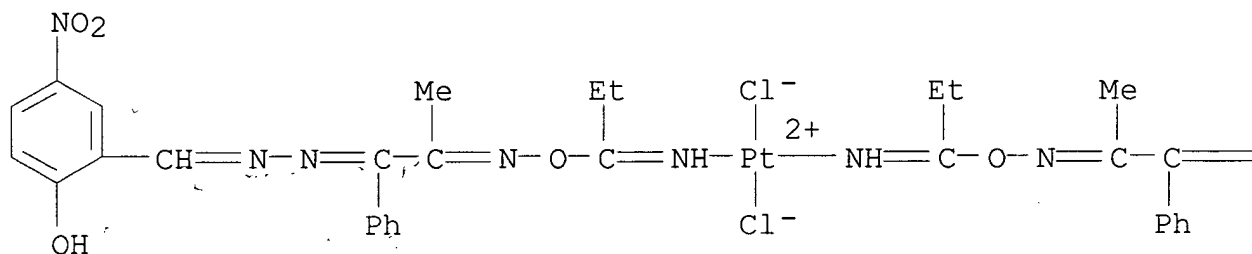
IT 709046-44-6P

(prepn., crystal structure and reaction with transition metal acetates)

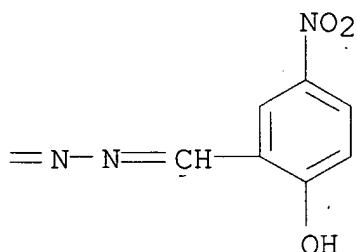
RN 709046-44-6 ZCAPLUS

CN Platinum, dichlorobis[[C(E)]-2-hydroxy-5-nitrobenzaldehyde (2E)-[(2E)-2-[[(1Z)-1-(imino-.kappa.N)propoxy]imino]-1-phenylpropylidene]hydrazone]-, (SP-4-1)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



DN 112:45614
 ED Entered STN: 04 Feb 1990
 TI Electrophotographic photoreceptor using azo dye
 IN Shiino, Yasuko; Umehara, Masashige
 PA Canon K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01021458	A2	19890124	JP 1987-177029	19870717

PRAI JP 1987-177029 19870717

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01021458	ICM	G03G005-06

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB In the title photoreceptor, a photoconductive layer contains an azo dye I [R1, R2 = H, alkyl, aralkyl, aryl; Ar1 = aryl, arom. heterocyclic group; R2 and Ar1 may form a ring; X may condense with the benzene ring to form a polyarom. or heterocyclic ring; Ar2 = arom. hydrocarbon ring, arom. heterocyclic ring; n = 1-4]. Efficiency of carrier generation and/or transportation can be improved with the above photoreceptor. A photoreceptor with II showed Vo -700 V and E1/2 lx-s.

ST azo dye electrophotog photoreceptor

IT Dyes, azo

(electrophotog. photoconductive layer contg.)

IT Electrophotographic photoconductors

(photoconductive layer contg. azo dye for)

IT	123576-96-5	123576-97-6	123576-98-7	123576-99-8
	123577-00-4	123577-01-5	123577-02-6	123577-03-7
	123577-04-8	123577-05-9	123577-06-0	123577-07-1
	123577-08-2	123577-09-3	123598-86-7	123598-87-8

124633-35-8

(photoconductive layer contg., for electrophotog. photoreceptor)

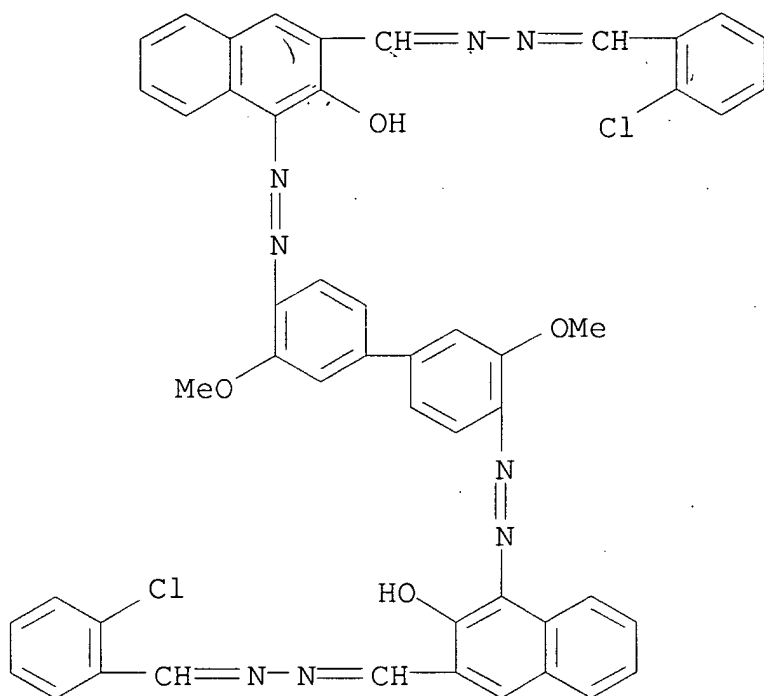
IT 123576-97-6 123577-03-7 123577-04-8

123598-86-7

(photoconductive layer contg., for electrophotog. photoreceptor)

RN 123576-97-6 ZCAPLUS

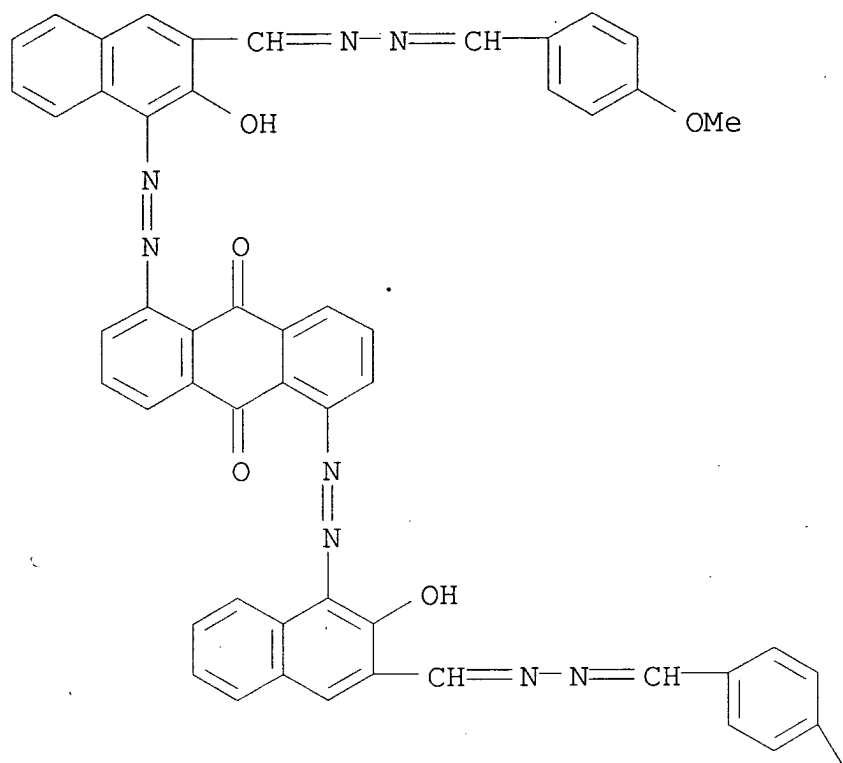
CN 2-Naphthalenecarboxaldehyde, 4,4'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[3-hydroxy-, bis[(2-chlorophenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)



RN 123577-03-7 ZCAPLUS

CN 2-Naphthalenecarboxaldehyde, 4,4'-[(9,10-dihydro-9,10-dioxo-1,5-anthracenediyl)bis(azo)]bis[3-hydroxy-, 2,2'-bis[(4-methoxyphenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)

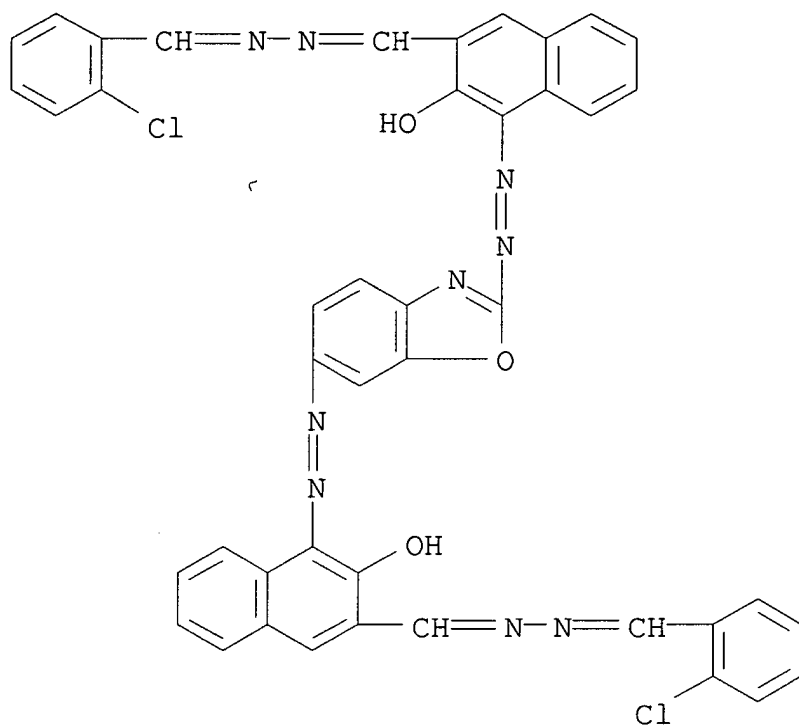
PAGE 1-A



PAGE 2-A

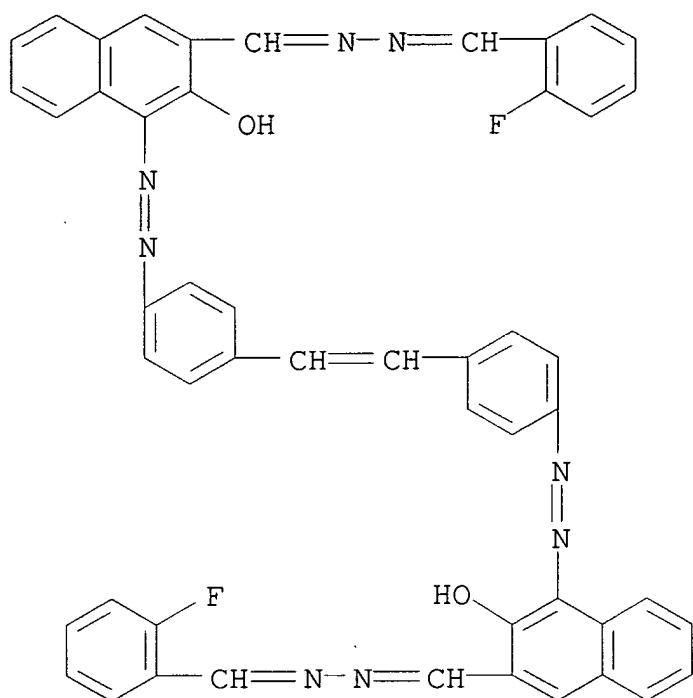
OMe

RN 123577-04-8 ZCAPLUS
 CN 2-Naphthalenecarboxaldehyde, 4,4'-[2,6-benzoxazolediylbis(azo)]bis[3-hydroxy-, bis[[2-chlorophenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)



RN 123598-86-7 ZCAPLUS

CN 2-Naphthalenecarboxaldehyde, 4,4'-[1,2-ethenediylbis(4,1-phenyleneazo)]bis[3-hydroxy-, bis[(2-fluorophenyl)methylene]hydrazo ne] (9CI) (CA INDEX NAME)



L9 ANSWER 4 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1988:560521 ZCAPLUS
 DN 109:160521
 ED Entered STN: 28 Oct 1988
 TI Electrophotographic photoreceptor using phthalocyanine dye and
 bishydrazone compound in the photoconductor layer
 IN Horie, Seiji; Makino, Naonori; Sato, Hideo
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03G005-04
 ICA G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63048552	A2	19880301	JP 1986-191774	

198608
18

US 4814245

A

19890321

US 1987-86449

198708

18

PRAI JP 1986-191774

A

19860818

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

JP 63048552 ICM G03G005-04
ICA G03G005-06

GI For diagram(s), see printed CA Issue.

AB The charge-generating layer contains a phthalocyanine dye (e.g., .epsilon.-type Cu phthalocyanine or AlCl₃-phthalocyanine complex), and the charge-transporting layer contains .gtoreq.1 bis-hydrazone compds. (I) and (II) (R₁, R₂ = C₁-12 alkyl, C₇-20 aralkyl, monovalent single or .gtoreq. 2-4-ring condensed arom.. hydrocarbon residue; R₁ and R₂ may form heterocycle; R₃ = H, C₁-12 alkyl, C₇-20 aralkyl, aryl; R₄, R₇ = C₁-12 alkyl, C₇-20 aralkyl, aryl, halo, alkoxy, aryloxy; R₅, R₆, R₈ = C₁-12 alkyl, C₇-20 aralkyl, aryl; R₅ and R₆ may bond together to form an N-heterocycle; X = (III); l, n = 0, 1-6; m = 0, 1; Y = O, S, Se, imino, CH₂; and Z = moiety necessary to form benzene and naphthalene ring). This electrophotog. photoreceptor provides high sensitivity and stability.

ST electrophotog photoreceptor phthalocyanine dye bishydrazone

IT Electrophotographic photoconductors

(composite, contg. bishydrazone compds. and phthalocyanine dyes)

IT 147-14-8 14154-42-8

(charge-generating layer contg., for electrophotog. photoreceptor)

IT 101158-34-3 101158-35-4 101158-37-6 101158-38-7 101158-40-1
101158-41-2 101158-43-4 101158-47-8 116826-20-1 116826-21-2
116826-22-3 116826-23-4

(charge-transporting layer contg., for electrophotog. photoreceptor)

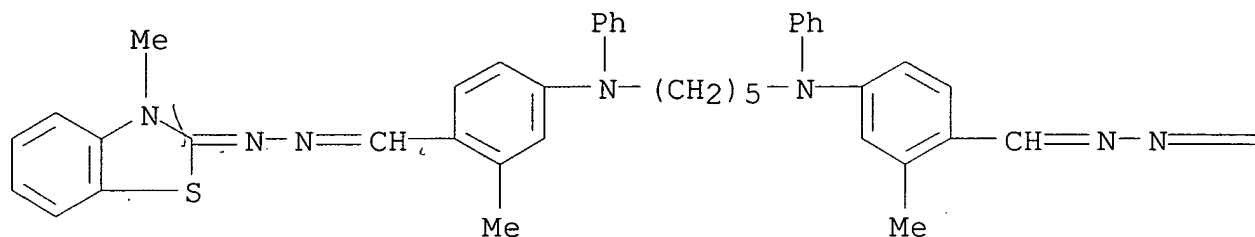
IT **116826-22-3**

(charge-transporting layer contg., for electrophotog. photoreceptor)

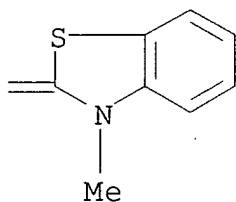
RN 116826-22-3 ZCAPLUS

CN Benzaldehyde, 4,4'-[1,5-pentanediy]bis(phenylimino)]bis[2-methyl-, bis[(3-methyl-2(3H)-benzothiazolylidene)hydrazone] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L9 ANSWER 5 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1986:139257 ZCAPLUS
 DN 104:139257
 ED Entered STN: 19 Apr 1986
 TI Electrophotographic photoreceptors
 IN Watarai, Osamu; Horie, Seiji
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 21 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03G005-06
 ICA C09B026-02; H01L031-08
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 60186847	A2	19850924	JP 1984-42370	198403 06
	JP 04005382	B4	19920131		

US 4594304

A

19860610

US 1985-708461

198503

05

PRAI JP 1984-42370

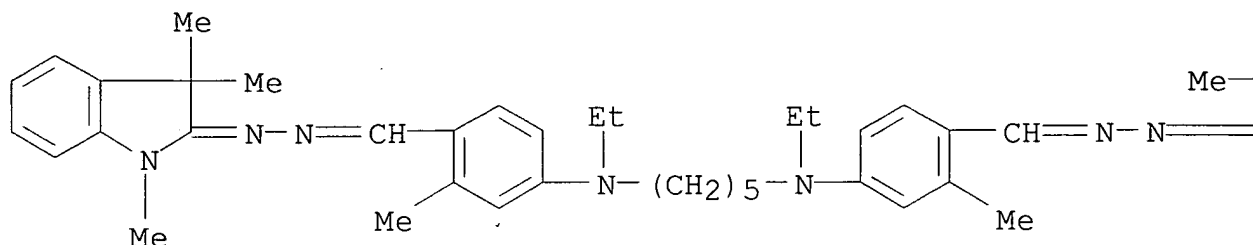
A

19840306

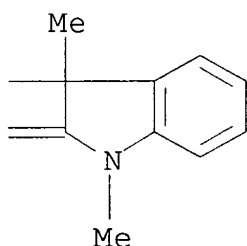
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 60186847	ICM	G03G005-06
	ICA	C09B026-02; H01L031-08
GI	For diagram(s), see printed CA Issue.	
AB	Electrophotog. photoreceptors contain .gtoreq.1 hydrazone compd. selected from I, II, and III [R, R1 = C1-12 alkyl, C7-20 aralkyl, condensed aryl (2-4 rings); RR1 in combination may complete a heterocycle; R2 = H, C1-12 alkyl, C7-20 aralkyl, aryl; R3, R4, R7, R8, R9 = C1-12 alkyl, C7-20 aralkyl, aryl; R3R4 in combination may complete a heterocycle; R5, R6 = H, C1-12 alkyl, C7-20 aralkyl, aryl, halo, alkoxy, aryloxy; A = benzene on naphthalene ring; Z = IV; m = 0, 1; n, p = 0-6; R10, R11 = same as R5 and R6; R10R11 may combine to form condensed ring; Z1 = O, S, Se, imino, methylene]. The hydrazone compds. are esp. useful as electrophotog. charge carrier-transporting agents.	
ST	electrophotog charge carrier transporting agent; hydrazone charge carrier transporting agent	
IT	Photography, electro-, developers (composite, charge carrier-transporting hydrazone compds. for)	
IT	101158-49-0	101158-50-3 101158-51-4 101158-52-5 101183-43-1 (electrophotog. charge carrier-transporting agent)
IT	101158-34-3P	101158-35-4P 101158-36-5P 101158-37-6P 101158-38-7P 101158-39-8P 101158-40-1P 101158-41-2P 101158-42-3P 101158-43-4P 101158-44-5P 101158-45-6P 101158-46-7P 101158-47-8P 101158-48-9P (prepn. of, as electrophotog. charge carrier-transporting agent)
IT	29666-92-0	(reaction of, with bis(methylformylanilino)hexane)
IT	101158-53-6	(reaction of, with diphenylhydrazine hydrochloride)
IT	101158-51-4	(electrophotog. charge carrier-transporting agent)
RN	101158-51-4	ZCAPLUS
CN	Benzaldehyde, 4,4'-[1,5-pentanediy]bis(ethylimino)]bis[2-methyl-, bis[(1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)hydrazone] (9CI) (CA INDEX NAME)	

PAGE 1-A

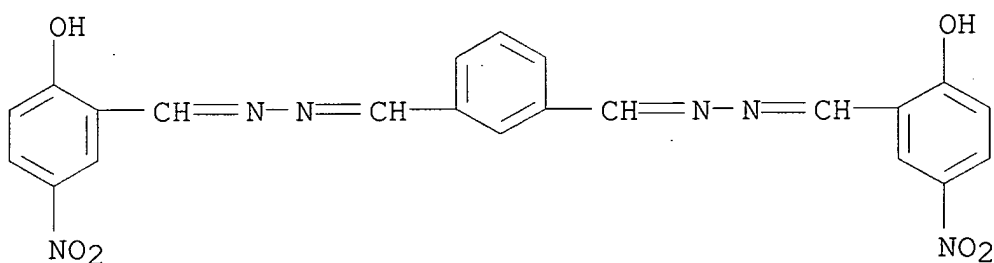


PAGE 1-B



L9 ANSWER 6 OF 6 ZCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1973:491705 ZCAPLUS
 DN 79:91705
 ED Entered STN: 12 May 1984
 TI Nonconjugated bis(arylidene)isophthalazines
 AU Shubina, L. V.; Gotsko, N. V.
 CS USSR
 SO Vestn. Beloruss. Univ. (1972), 2(3), 40-3
 From: Ref. Zh., Khim. 1973, Abstr. No. 5Zh211
 DT Journal
 LA Russian
 CC 25-5 (Noncondensed Aromatic Compounds)
 GI For diagram(s), see printed CA Issue.
 AB Reaction of 1,3-C6H4(CHO)2 with N2H4.H2O in alc. 2 hr at
 .apprx.20.degree. gave 70% 1,3-C6H4(CH:NNH2)2, which with the
 appropriate aldehyde gave the title azines (I). Among the I prepd.
 were the following (Ar, % yield given): Ph, 60; 2-HOC6H4, 83;
 2-MeOC6H4, 85; 2,5-HO(O2N)C6H3, 77; 2-naphthyl, 69. HCl salts were
 prepd. and characterized.
 ST isophthalazine bisarylidene; arylideneisophthalazine; azine
 isophthalaldehyde arom aldehyde
 IT Azines
 (of arom. aldehydes and isophthalaldehyde)

IT 36604-00-9P 42546-09-8P 42546-10-1P **42546-11-2P**
42546-12-3P 42546-13-4P 42546-14-5P 42546-15-6P 42546-16-7P
(prepn. of)
IT 42546-17-8
(reaction of, with arom. aldehydes)
IT 66-99-9 97-51-8 100-10-7 104-88-1 123-11-5 135-02-4
574-96-9
(reaction of, with isophthalaldehyde dihydrazone)
IT 90-02-8, reactions 100-52-7, reactions
(with isophthalaldehyde dihydrazone)
IT **42546-11-2P**
(prepn. of)
RN 42546-11-2 ZCAPLUS
CN 1,3-Benzenedicarboxaldehyde, bis[[(2-hydroxy-5-nitrophenyl)methylene]hydrazone] (9CI) (CA INDEX NAME)



Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4338	azine or ketazine	USPAT	OR	OFF	2005/03/04 16:47
L2	1669	azine or ketazine	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 16:47
L3	1495	azine or ketazine and amine	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 16:47
L4	1492	azine or ketazine and amine and charge	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 16:47
L5	1492	azine or ketazine and amine and charge adj transport	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 16:47
L6	1669	azine or ketazine	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 17:05
L7	47	I6 and charge adj transport	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 16:56
L8	102	I6 and electrophoto\$	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 16:57
L9	0	I8 not I6	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 16:57
L10	67	I8 not I7	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 16:57
L11	1567	I6 not I8	EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2005/03/04 17:06